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ENTOMOLOGICAL NEWS

VOL. LIV MARCH, 1943 No. 3

Notes on Odonata of Surinam.

III. The genus Coryphaeschna, with descriptions of a new species and of the nymph of C. virens [1]

By D. C. GEIJSKES, Landbouw-proefstation, Paramaribo, Surinam.

The genus *Coryphaeschna* was proposed by Williamson (1903) on account of differences in the wing venation, found in the species *ingens, virens* and *adnexa* from other species of the genus *Aeschna,* in which genus they were placed before. Calvert (1905) has arranged under this group, beside the three mentioned species, also *luteipennis* and *perrensi,* but under the generic name *Aeschna,* while Martin (1908) included them under *Aeschna.*

Ris (1918) brings together under *Coryphaeschna* also the group *castor,* with the species *castor, januaria* and his new species *coronata.*

Later on Kimmins (1929) describes a new species of *Coryphaeschna* as *longfieldae,* a near relative of *januaria.*

By this, the total number of the known species of *Coryphaeschna* is increased to nine and with the new one described in this paper, the total amounts to ten.

This collection of species forms not a homogenous complex, but a composition of two groups viz: the *virens*-group and the *castor*-group. Each of them is characterized by the wing venation especially. Ris already noted, that *castor* probably represents a different genus, but without further data at hand, we are letting it remain under *Coryphaeschna.*

[1] I. *Rimanella arcana* Needham and its nymph (Odon. Zyg.). *Revista d. Entomologia,* Vol. 11, fasc. 1–2, June 1940, Rio de Jan., pp. 173–179, 8 figs.

II. Six mostly new Zygopterous nymphs from the coastland waters. *Annals, Ent. Soc. America,* XXXIV, no. 4, Dec. 1941, pp. 719–734, 6 figs.

Nymphs of the species of *Coryphaeschna* are known only for *virens* and *ingens,* both belonging to *Coryphaeschna* s.str. How far those of the *castor*-group are different from these the future will show.

By this heterogeneous composition of the genus, it is difficult to give its generic characters. The following peculiarities may generally define the genus in its present form: *Rs* forked under the middle of pterostigma or 1–3 cells before, or at the level of its proximal end. In the fork of *Rs* mostly two cell rows. Between *Rs* and *Rspl* approximately 7 rows of cells (4–8), *Mla* arising from nearly one cell to more than one cell behind the pterostigma. Proximal side of triangle in hind wing usually, but not always (*januaria*), less than half as long as the posterior side. M_4 mostly broken. Anal triangle in male 2-celled, rarely 4–5-celled (*dentata*).

Against these characters, those of the genus *Aeschna* s.str. are as follows: Inner side of triangle of hind wing at least half as long as the outer side. Between *Rs* and *Rspl* at least three rows of cells in its widest part. *Mla* arising from just before to just behind the stigma. M_4 unbroken although more or less sinuate distally. Anal triangle in male mostly 3-celled, rarely 2-celled.

The nymphal characters of *Coryphaeschna* s.str. are: Nymph long and slender, mentum very long, reaching to or below the metacoxae; a long sharp tooth on either side of the mental cleft;[2] rear of head flat, hind angles square-cut; no dorsal hooks, lateral spines on abdominal segments 6–9; superior abdominal appendage not bifid, only slightly longer than the lateral appendages and nearly as long as the inferiors.

Phylogenetically Walker (1912) regarded *Coryphaeschna* as "a lateral offshoot from *Aeschna,* in which the specialization in wing characters has been carried a little farther than in the latter genus" (p. 22).

In its geographical distribution, the genus is confined to the Neotropical region. The *castor*-group occurs in the tropics only, with the exception of *januaria,* which is found also in Mexico;

[2] Known also from *Staurophlebia,* described by Needham (1904).

the species of the *virens*-group, however, live for the most part in the subtropical region and even in the temperate zones North and South of the equator (*ingens* in the U. S. and *perrensi* in Argentina).

The species known from Surinam are: *virens* Ramb., *adnexa* Hagen and *dentata* n.sp., the first two living along the coast in the north, the last one found at the southern border near Brazil. Martin (l.c.) notes also *castor* and *perrensi* from Surinam, but these records are obviously wrong.

luteipennis	Brazil (Rio d. J., S. Paulo), Colombia, Costa Rica, Mexico.
ingens	Panama, Cuba, Bahamas, Florida, Georgia (?).
perrensi	Argentina, Corrientes (Surinam?).
adnexa	Brazil (Amazonia), Colombia, Ecuador, Panama, Honduras, Mexico, Cuba, Haiti, San Domingo, Puerto Rico, Trinidad.
virens	Brazil (Matto Grosso, Amazonia), Bolivia, Surinam, Trinidad, Cuba, Haiti.
januaria	Brazil, Colombia, Mexico.
longfieldae	Brazil (Matto Grosso).
casiör	Brazil (Rio d. J., Esp. Santo), (Surinam?).
coronata	Bolivia.
dentata	Surinam.

Key to the species

A. Fork of *Rs* in front and hind wing at the level of the proximal end or under the middle of pterostigma (*virens*-group) 1

1. Thorax green with broad brown bands along the dorsal carina, the humeral and the second lateral sutures, abdomen brown or black for the most part 2

Thorax green, only small brown lines on the sutures 3

2. Stigma in front wing 4 mm.; male superior appendages with a deep subquadrangular incision on the inner margin at three-fourths their length; those of the female very short. Cu_1–Cu_2 with two rows of cells in the proximal part of the field .....*luteipennis* Burmeister

Stigma in front wing 6 mm.; male superior appendages with entire margin; female superior appendages very long .....*ingens* Rambur

3. Frons with a black T-spot, face blue or green 4
Frons without a black T-spot, face reddish, stigma in front wing 4.5–5 mm. .....*perrensi* MacLachl.
4. Smaller species, face blue, hind wing 40–43 mm.; male inferior appendage reaching to ⅔ the superiors. *adnexa* Hagen
Larger species, face green, hind wing 48–54 mm., male inferior reaching to ⅗ the superiors ....*virens* Rambur

B. Fork of *Rs* 1–3 cells proximal to the stigma (*castor*-group) 5

5. Black T-spot on frons absent or incomplete, without stem and with a brown transverse band at the anterior frons angle. Male with last three abdominal segments with paler spots 6
Black T-spot on frons present, with or without stem. Male with last three abdominal segments dark, without paler spots 7
6. Male superior appendages with an infero-basal tooth; abd. 54–58 mm., hdw. 53 mm. .....*januaria* Hagen
Male superior appendages without an infero-basal tooth; abd. 57 mm., hdw. 53 mm. (female unknown). *longfieldae* Kimmins
7. Black T-spot on frons with a rhomboidal stem, connected with the broad basal black line. Male superior appendages with an infero-basal tooth. Pterostigma in hind wing 4 mm., large species .....*castor* Brauer
Black T-spot on frons quadrangular, largely situated on the apical part of frons without stem or any black connection with the narrow basal black line. Male superior appendages without infero-basal tooth, hind tips slightly acute, inferior appendage reaching at least to half length of the superiors. Pterostigma in hind wing 3.5 mm. (female unknown) .....*coronata* Ris
Black T-spot on frons broadly connected with the broad basal dark line. Male superior appendages without infero-basal tooth, hind tips very acute, pointed; inferior appendage short, reaching to one-third length of the superiors. Pterostigma in hind wing 3.5 mm. (female unknown) .....*dentata* n. sp.

Coryphaeschna dentata new species (Figs. 1, A–F.)

Total length incl. app. 72 mm.; abd + app. 56 mm.; app. sup. 6.0 mm.; front wing 50 mm., stigma 4.25 mm.; hind wing 49 mm., stigma 3.5 mm.

A moderately large species, bluish green with the abdomen largely dark.

Labrum, clypeus and frons bluish green with orange yellow margins, mouth-parts brownish at the tips, otherwise pale bluish. Angle of frons black, widely fused by a broad somewhat diffuse stem with the black basal marginal area before the ocelli and the antennal bases; the pale area on each side of the stem yellow brown. Frons beset with soft black hairs, especially along the sides, front margin seen from above arcuated. Occipital triangle black, in the median line from half the length to the hind margin a yellow stripe. Rear of head black, a large pale spot each side behind the eyes in the lower half.

Thorax bluish green before, to green in the hind part with black or dark brown bands along the sutures. The middorsal carina forms the middle line of a black triangle, of which the top reaches the upper suture. Antehumeral stripe blue or bluish green, smaller than the dark humeral stripe, widest in the upper half and reaching to the upper suture line; narrowed below. Black humeral band broad, about two-fifths the width of mesodorsum, a small black stripe along the humeral suture in the upper mesepisternum. Mesipimeron and metepisternum bluish green, a much smaller dark brown line just before the stigma, running from wing base to the end of metepisternum below. Metepimeron green; a short dark brown stripe along the second suture in the upper fourth and a dark line along the suture of the wing base. Legs black, except ventral side of first femur which is largely pale greenish; claws with a well developed tooth halfway the length.

Abdominal segment 1: basal half brown, dorsum with a black triangle, the top reaching the hind margin in the median line; a green postdorsal spot connected with the green of the sides; lateral hind margin black. Segm. 2: dorsum largely black with a green to yellowish middorsal line not reaching the hind margin; dorso-lateral spot yellow, long, just before the latero-transverse carina and ending at the auricle. The dorso-apical spot small, half-moon shaped. Black of dorsum passing along and behind the auricle and obliquely running forward to near

the ventral basal corner of the tergite. Auricle small, green, tip yellow, with three teeth of which the inner tooth is the largest. Sides of segm. 2 green, hind membrane black. Segm. 3–7 largely dark brown or black, dorsum black, behind the transverse carina a medio-dorsal yellow stripe and a rounded small postdorsal spot apically. Sides with a large antero-basal spot, a medio-lateral spot at the carina and a small post-lateral

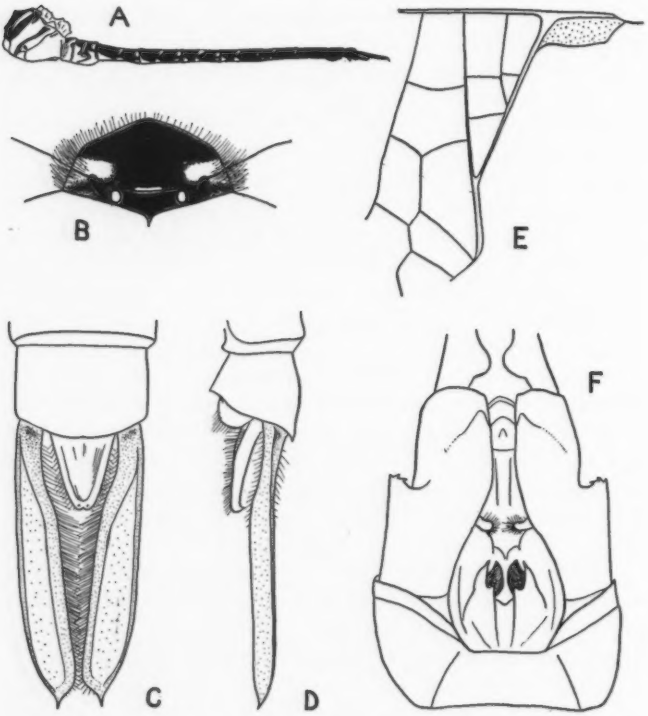

Fig. 1. *Coryphaeschna dentata* n. sp. male type. A. Color pattern of thorax and abdomen; B. black T-spot on the frons; C. dorsal view of appendages; D. lateral view of appendages; E. Anal triangle, right wing; F. ventral surface of abdominal segments 1 and 2.

spot to the hind margin. On segm. 6 and 7 the post-lateral spot absent. Segm. 8–10 black. Ventral surface of segm. 3–10 brown, except on segm. 9 where it is largely black with the genital valves yellow.

Appendages: superiors dark brown, inferior black, shining; superiors long lanceolate, flat with an acute pointed hind tip, basal third petiolated, innerside over its entire length beset with long black bristles. Inferior appendage short, broad and flat, the hind tip slightly incised and with two teeth directed upward, reaching caudad to the basal third of the superiors, beset with black bristles on the underside.

Sternites of segm. 1 and 2 without denticles, the end of the ventral edge of pleurite of segm. 2 bristled. The spines of the anterior lamina conical, directed caudad to just behind the anterior hamule. Anterior hamules triangular, the tips directed cephalad; posterior hamules small spatula-shaped, bristled at the anterior margin, the tips rounded and directed medio-caudad.

Wings slightly yellowish-tinged; pterostigma brown, membranule unicolorous gray. Fork of *Rs* in front wing at the level of one postnodal cell before the stigma, in hind wing 4 postnodal cells before the stigma. Fork of *Rs* enclosing 3–4 cell rows under the middle of stigma. *Rs–Rspl* very broad, from the beginning of furcation of *Rs* 6–7 cells broad; M_4–*Mspl* broad, in the middle 4–5 cells broad; between M_3 and M_4 in the apical half 2 cell rows; M_4 forked in the hind wing, anal branch dilating and farther on parallel to M_3, with 2 cell rows between M_3 and M_4. Triangle long, in front and hind wing with a proximal longitudinal vein (in left front wing with two such veins) and 5 cross veins, number of cells in t 9.8/7.7; cubito-anal cross veins 6.7/5.5, ht 8.7/5.7 ti with one cross vein (left fr.w. with two cross veins). Anal loop with 3 cell rows against A, in total with 10–11 cells; between anal loop and hind margin of wing 2 cell rows; anal field in maximum 3 cell rows broad, anal triangle in left hind wing with 4, in right hind wing with 5 cells (see fig. 2, E). Number of antenodal cross veins (between costa and subcosta) 28.28/18.17, second thickened vein at 9.9/7.6; postnodal cross veins

17.19/22.21. There is one subbasal cross vein before the first thickened vein in the right front wing. Front wing with arculus between ant. crossv. 2 and 3 (left side), 3 and 4 (right side), in hind wing between 2 and 3.

SURINAM, Paloemeu River near Indian village Julu (Joeloe), 3. I, 1941 one male ad. (L. Schmidt) *holotype*, in the writer's collection.

This species belong to the *castor*-group by the position of the fork of *Rs* before the stigma and by the longitudinal vein at the proximal side of t. It is a near relative of *coronata* Ris, from which it differs however, beside the points mentioned in the key, in the wing venation as follows:

	coronata	*dentata*
Number of cell rows between Rs–Rspl	5	6–7
" " " " " M_4–Mspl	3*	4–5
" " " " in anal loop	2	3
Internal triangle	free	1–2 cross veins
Anal triangle	2-celled	4–5 celled

CORYPHAESCHNA VIRENS, Rambur, Nymph (hitherto unknown), reared, Fig. 2, A–F.

A long slender pale light brown or black nymph.

Head as long as broad, the eyes not very prominent, hind lobes flat, hind angles right-angled or nearly so, occipital border slightly excavated. Sides of hind lobes straight, diverging cephalad slightly, about half as long as the eyes.

Antenna minute, seven-jointed, the first two segments swollen, the remaining part slender, the fourth joint the shortest; length of the segments: 0.45, 0.45, 0.74, 0.37, 0.53, 0.57, 0.53 mm.; apical end of segm. 3 and the basal three-fourths of segm. 4 and the middle part of segm. 7 darker, otherwise pale, segm. 2 hairy.

Mentum very long, reaching backward to the beginning of the hind coxae, basal two-thirds slender, length: width = 7:2;

[* In a male of *coronata* from Satipo, Peru, 14 November, 1940, *M_4–Mspl* has three rows of cells on both front wings and the right hind wing, 4 rows on the left hind wing, 3 vertical rows of cells in the anal loop of both hind wings.—P. P. Calvert.]

apical third considerably dilated, median border with a small cleft in the middle, on each side a long sharp-pointed tooth. Lateral lobes short, the movable hook very long, curved, with a row of short spines interiorly; terminal hook long, pointed, curved inward at an angle of about 100°, inner margin of lobe and front part of terminal hook finely crenulated.

Maxillae each with seven large teeth.

Mandibulae with strong teeth, left mandibula with 4 apical teeth (incisors), right mandible with 5 apical teeth; more basally a highly chitinized rib (molar) on either side with one tooth (left mandible) or on one side one tooth and on the other side two teeth (right mandible).

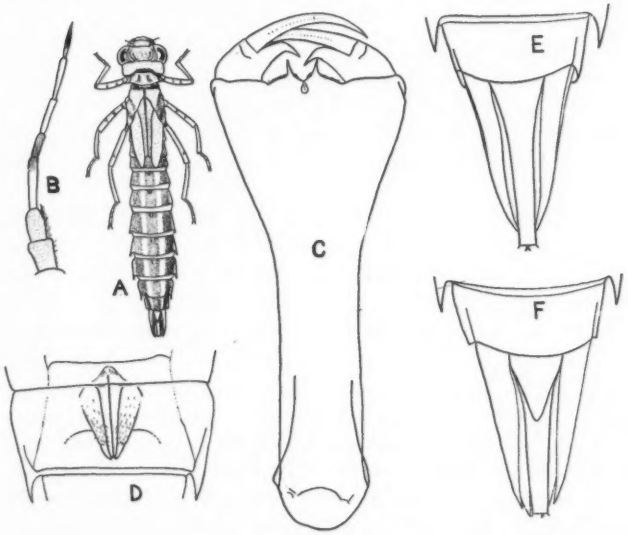

FIG. 2. *Coryphaeschna virens* Rambur. A. dorsal view of full grown male nymph; B. right antenna; C. mentum, innerside; D. gonapophyses, female; E. dorsal view of abdominal appendages of female; F. idem of male.

Prothorax broad, lateral angle of middle lobe bluntly pointed; supracoxal prominences minute, the frontal lobe smaller than the caudal lobe. Synthorax small, wingpads reaching to the beginning of abd. segm. 4. Legs relatively short; in the darker specimens four darker bands on the femora, or three lighter bands and a basal dark band on the tibiae. Apical end of tibiae beset with short thick simple spines and trident setae, tarsus first joint with simple and some trident setae, on second and third joints trident setae only.

Abdomen slender, broadest on segm. 6–8; a middorsal darker band (in the paler specimens diffuse) and on each side a broad darker band above the carinae; in the darkest specimens the whole abdomen black; lateral spines on segm. 6–9, those of segm. 6 minute. Female gonapophyses short, not reaching the end of segm. 9.

Appendages long and all of nearly equal length; tip of middorsal squarely truncate, not bifid; dorso-laterals (cercoids) slender, sharp pointed, as long as middorsal; ventrals (cerci) a little longer the pointed tips slightly curved inward; male triangle reaching to one third the length of the middorsal appendage.

♂. Total length 47 mm.; abd. + app. 33.5 mm.; appendages 4.2 mm.; hind femur 7.5 mm.; mentum 1¾ mm.; abd. widest segm. (6) 7 mm.; width of head across the eyes 8 mm.; across the hind angles 5.5 mm.

♀. Total length 49 mm.; abd. + app. 33 mm.; appendages 4.2–5 mm.; hind femur 7 mm.; mentum 13.5–14 mm.; abd. widest segm. (6) 7.5–8 mm.; width of head across the eyes 8.2 mm.; across the hind angles 5.7–6 mm.

(Examined one male and one female ult nymph and one male and 8 female exuviae).

The nymphs of *C. virens* were commonly found in swamps and ditches in the coastland and in the interior on the savanna (Paramaribo, Lelydorp, Zandery I and II, Nickerie). Six specimens have been reared, two from the 5 ult, two from the 4 ult and two from the 3 ult instar. The younger nymphs are green with a yellow middorsal stripe. Of the reared speci-

mens, the moulting dates and the number of days in the different instars are tabulated in the following:

	locality	collected	5 ult days	5 ult moulting	4 ult days	4 ult moulting	3 ult days	3 ult moulting	2 ult days	2 ult moulting	1 ult days	1 ult moulting	imago sex
No. 1	Lelydorp	17.VII.1940	(6)	23.VII	7	30.VII	8	7.VIII	17	24.VIII	26	19.IX	female
No. 2	Lelydorp	17.VII.1940			(11)	28.VII	10	7.VIII	17	24.VIII	26	19.IX	female
No. 3	Lelydorp	17.VII.1940			(13)	30.VII	10	9.VIII	15	24.VIII	28	21.IX	female
No. 4	Lelydorp	31.VII.1940					(5)	5.VIII	21	26.VIII	29	24.IX	female
No. 5	Pa·amaribo	5.II.1941					(12)	17.II	36	25.III	22	16.IV	male
No. 6	Zanderij I	27.V.1941	(16)	12.VI	4	16.VI	10	26.VI	25	21.VII	52	11.IX	female

It is noteworthy, that the number of days for the instars are very inconstant among the reared specimens. The specimens are all bred at the same place in the laboratory and constantly fed with mosquito larvae. Nymphs of *Coryphaeschna* have been described by Kennedy (1919) and Byers (1930) for *C. ingens*. This nymph differs from those of *C. virens* only in the measurements. Total length of *ingens:* 62–65 mm.; abd. 42.5–44 mm.; hind femur 6.5–8 mm.; width of abdomen 10 mm.; mentum 14.5 mm.; extending well below the metacoxae.

Garcia Diaz (1938) has described by supposition the nymph of *Coryphaeschna adnexa* Hagen, but this is the nymph of *Gynacantha nervosa* Ramb. as suggested also by himself (p. 85), known to me by breeding.

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New Hesperioidea, with Notes on Some Others from the United States (Lepidoptera, Rhopalocera).

By H. A. FREEMAN, White Deer, Texas

Thorybes pylades albosuffusa new form

This new form differs from typical *pylades* (Scudder) in the following particulars: on the under surface of the secondaries there is a prominent submarginal suffusion of greyish-white scales. In *pylades* this is not present or else is very faintly indicated. The fringe of the secondaries is lighter than that of *pylades* caused by the presence of some white scales. The palpi beneath are grey and not concolorous with the under surface of the body. In *pylades* the palpi are concolorous with the under surface of the body.

Described from 5 specimens, 2 males and 3 females, collected by Mrs. H. A. Freeman and the author at Ft. Davis (type locality) and Alpine, TEXAS, during June of 1940 and 1942.

Holotype male and *allotype* female are in the collection of the author. *Paratypes*, 1 male and 2 females, will be disposed as follows: 1 male to the United States National Museum; and 1 female to the Academy of Natural Sciences, Philadelphia. The other female paratype will remain for the present in the collection of the author.

Although it is not always advisable to name forms of most species of butterflies, occasionally one appears that causes difficulty in correctly determining the species. The writer believes

this to be the case in the above described form as some of the specimens somewhat resemble *drusius* (Edwards). However, *albosuffusa* is a much browner insect than *drusius* and the fringes are not nearly so white.

ERYNNIS PERSIUS (Scudder)

Typical *persius* can readily be determined in the north central and eastern states by the abundant hair on the base and disc of the primaries and the general smooth appearance. Dr. W. T. M. Forbes figures the genitalia of this species in "The *Persius* Group of *Thanaos*," Psyche, vol. 43, pp. 104–113, December, 1936. The tip of the lower lobe of the left valve is without teeth or else there is the slightest indication of a roughened surface.

The range of *persius* consists of southeastern Canada, the New England states to Florida, westward to Arkansas, and northward through Kansas to Nebraska and Minnesota.

ERYNNIS PERSIUS PERNIGRA (Grinnell)

This is the high mountain subspecies that occurs in California and Utah. It can be recognized by the uniform, blackish-slate coloration of both wings above. There are very few grey hairs on the primaries.

Genitalically *pernigra* differs from *persius* only in the presence of several teeth on the tip of the lower lobe of the left valve.

ERYNNIS PERSIUS AVINOFFI (Holland)

There has been some question as to the exact status of *avinoffi* for sometime. With this in mind the writer wrote Mr. W. R. Sweadner of the Carnegie Museum, Pittsburgh, Pennsylvania to see if it would be possible to borrow a paratype so as to make a slide of the genitalia. Mr. Sweadner kindly sent one male paratype and another male from the type series for that purpose. The genitalia revealed that *avinoffi* is a subspecies of *persius* and like *pernigra* it differs only in the presence of some teeth on the tip of the lower lobe of the left valve.

In general appearance *avinoffi* differs from typical *persius* in the following ways: the fringe of the secondaries is somewhat lighter. The hair of the primaries is not so thick nor as long. As a whole, most examples are slightly smaller.

Avinoffi is the arctic subspecies of *persius* as it occurs in northern Canada and Alaska.

Erynnis persius frederickí new subspecies

This new subspecies differs from typical *persius* (Scudder) and its two other subspecies in the following particulars: the hair on both the primaries and secondaries is longer and thicker. There are more grey scales and hairs present on the primaries. The dark sagittate markings are very black, thus producing a greater contrast in the light and dark areas. The fringe of the secondaries is lighter than in *persius* and some of the specimens have the outer half clear white. *E. p. frederickí* can readily be identified by the shaggy appearance of the primaries and the lighter fringe of the secondaries.

Genitalically *frederickí* differs from *persius* in the following ways: there are two to four teeth on the tip of the lower lobe of the left valve. There is a tendency for the lower lobe of the right valve to turn downward and the ventral surface of the right valve is very uneven, a tendency not noticed in most specimens of *persius*. The lower lobe of the right valve is also shorter than in *persius*.

Expanse: males 26–33 mm., average size 30 mm.; females 26–35 mm., average size 32 mm.

Described from 60 specimens, 44 males and 16 females. 29 males and 8 females were collected by V. H. & A. C. Frederick near Lead, Spearfish Canyon (type locality), Icebox Canyon and Terry Peak, all in SOUTH DAKOTA, during June of 1939 and 1942; 13 males and 2 females were collected by H. A. Howland at Polaris, Montana; 1 male and 5 females were collected by Dr. J. R. Turner at Beulah and Wolf Creek Pass, Colorado during June of 1942; 1 male from Lake Tahoe, Placer County, California, June 12, 1939 and 1 female Kings River, Fresno, California, September 30, 1941.

The writer takes great pleasure in naming this new subspecies for Mr. A. C. Frederick of Albany, New York, who, along with his wife, collected most of the specimens.

Holotype male and *allotype* female are in the collection of the author. Three male and 6 female *paratypes* are in the collection of Stallings and Turner, Caldwell, Kansas. Forty-nine *para-*

types will be disposed as follows: 14 males and 2 females to the collection of Mr. A. C. Frederick, Albany, New York; 2 males and 1 female to the American Museum of Natural History, New York; 2 males to the United States National Museum; 2 males to the Academy of Natural Sciences of Philadelphia; 2 males to the collection of Mr. Lowell Hulbirt, Glendora, California; and one pair to the collection of Mr. Otto Buchholz, Roselle Park, New Jersey. The other 22 paratypes will remain for the present in the collection of the author.

AMBLYSCIRTES SIMIUS Edwards

Edwards described this butterfly as *Amblyscirtes simius* in 1881.[1] Since that time it has been placed in the genus *Chaerephon* Godman & Salvin by Dr. A. W. Lindsey and in Mr. E. L. Bell's "The Hesperioidea," Bulletin of the Cheyenne Mountain Museum, vol. 1 (part 1) October 4, 1938, it was listed under the genus *Yvretta* Hemming along with *rhesus* (Edwards) and *carus* (Edwards). Mr. Edwards was correct when he described this species in the genus *Amblyscirtes*. The writer has examined five male and one female collected by Stallings and Turner, of Caldwell, Kansas, in the Palo Duro Canyon of Texas during May and June, 1942 and thirty-five males and four females collected by the writer at the same locality during May, 1942. *Simius* differs from members of the genus *Yvretta* in the following particulars: the third joint of the palpus is long and slender, whereas that structure in *rhesus, carus,* and *citrus* (Mabille) (a Mexican species) is short and rather stout. The antennal club in *simius* has a short reflexed apiculus. This is not present in any of the *Yvretta.* The reflexed apiculus is a characteristic of the genus *Amblyscirtes.* The long, slender third joint of the palpus and the manner with which it is upturned likewise associate this species with other members of the genus *Amblyscirtes.* The middle tibiae are spined.

Skinner and Williams in their study "On the Male Genitalia of the Hesperiidae of North America, Paper 111,"[2] state

[1] Trans. Amer. Ent. Soc., IX, p. 6.
[2] Trans. Amer. Ent. Soc., XLIX, 129–153, July 30, 1923.

on page 138 that the male has no stigma. Possibly this is a misprint or else an error because the males of *simius* do have a short, black stigma that is readily discernible.

Genitalically this species is not like other members of the genus *Amblyscirtes,* however, the main characters are certainly nearer that genus than they are to members of the genus *Yvretta.*

Superficially on the under surface this species shows a decided relationship with *oslari* (Skinner) in the arrangement of spots on both the primaries and secondaries. In habits the two are very similar. The writer has collected both species at the same time and place as they rested on light colored soil and rocks. It was difficult to tell the two apart when they had their wings folded vertically above their bodies.

From the above information the writer is returning this species to the genus *Amblyscirtes* where it was first placed.

Megathymus yuccae alabamae new subspecies

This new subspecies resembles the subspecies *navajo* Skinner more than it does typical *yuccae* (Bdv. & LeC.). Typical *yuccae* from Florida and Georgia is deep umber-brown with the spots, base of primaries and marginal border of the secondaries decidedly yellow. On the under surface of the secondaries of *yuccae* there is usually a single crescent like spot near the costa. *Navajo* is the subspecies that occurs in New Mexico, Arizona and California and is characterized by the black coloration of the wings, the spots of the primaries and on the secondaries of the females are white or very light yellow and the marginal border is rather broad and is grey. *Navajo* is also characterized by the presence of two white spots near the costa on the under surface of the secondaries, one is crescent shaped and the other more or less oval.

Alabamae differs from *yuccae* in the following particulars: the wings are black. All the spots on the primaries except the subapical ones are light yellow. The base of the primaries shows a very few yellow scales and hairs and the marginal border of the secondaries is light yellow with some grey scales intermixed.

Alabamae differs from *navajo* in the following particulars: the spots on the primaries are a little larger and somewhat yellower. The marginal border of the secondaries is more yellowish and there is a single crescent shaped spot near the costa on the under surface of the secondaries.

Expanse: Holotype male 56 mm., paratype male, 50 mm.

Described from two males, received from Mr. A. C. Frederick, Albany, New York, and collected by Mr. M. E. Smith at Anniston, ALABAMA on April 12, 1937.

Holotype male and male *paratype* are in the collection of the author.

The editor of the Entomologist's Record and Journal of Variation, in his December, 1942 number, calls attention "to the loose way that the word 'type' is so frequently used of late . . . A large number of insects lie before me which bear the label 'type.' Not a single one of them is a 'type.' They are, in the opinion of the collector, specimens like the type, i.e. typical examples of the species and not the 'original specimen' or 'illustration' upon which the specific name was bestowed."

Adult and Immature Stages of *Cricotopus elegans* n. sp. (Chironomidae, Diptera).

By O. A. JOHANNSEN, Ithaca, N. Y.

Specimens of an undescribed species of *Cricotopus,* the larvae of which were found mining in the leaves of *Potamogeton,* were sent to me for determination by Mr. C. O. Berg of Ann Arbor, Michigan. The species most closely resembles *Cricotopus infuscatus* (*Trichocladius infuscatus* Malloch) and *C. politus* (*Orthocladius politus* Coq.) as well as the European *C. obnixus* (Walk.), differing from them in the deeper color of the abdomen and in leg or male antennal ratio, or in the structure of the terminalia of the male. The larva will find a place in my key (Aquatic Diptera, III, page 59) tracing to *Spaniotoma,* second paragraph of couplet 20, differing from the species in couplet 21

in antennal and labral structures. The pupa will find a place in the key to *Cricotopus* on page 52, in the second paragraph of couplet 4, differing from species given there in having smaller respiratory organs.

Cricotopus elegans n. sp.

Male. Dark species with non-annulate dusky legs. Head yellow, antenna including basal segment, and mouth parts including palpi, dark brown. Thorax highly polished, yellow, the three broad mesonotal vittae, pectus, a pleural spot, scutellum, and metanotum, shining black. Halteres yellow. Tergum of abdomen dull, velvety black, hairs dark, venter and terminalia brownish. Eyes black, pubescent. Antennal ratio 1.4; ratio of fore basitarsus to its tibia 0.52; fore tarsi not bearded; spur of fore tibia about as long as the diameter of the apex of the tibia; empodium two-thirds as long as the claws; pulvilli vestigial.

Wings milky white, no microtrichia visible under 400 diameters magnification; veins pale yellowish, second branch of radius ending slightly beyond middle of distance between tips of anterior and posterior branches, costa distinctly produced beyond the tip of first branch of radius which ends well beyond the level of the tip of the anterior branch of the cubitus; cubitus forks slightly distad of the crossvein; anal vein ends slightly distad of the cubital fork; squamae fringed.

The hypopygium is of the normal *Cricotopus* type, the anal point lacking; basistyle with prominent basal lobe resembling that figured for *C. flavipes*[1] but more tapering toward the apex; apical spine of dististyle is about two-thirds as long as the diameter of the dististyle near the apex. Length of male 3 mm.; of wing, measured from the humeral crossvein, 1.5 mm.

Female. Similar to the male except for sex characters and that the wing veins are darker. Antennal ratio 0.4. Length 2.5 mm.

Holotype (♂) and allotype (♀) in the Cornell University Collection. Paratypes: 16 in the Cornell University Collection and 6 in the collection of Mr. C. O. Berg.

[1] Ent. News, LIII, p. 75, 1942.

Larva. Length 5.5 to 6 mm. Near each caudo-lateral margin of body segments 3 to 11 with a hair pencil as in *trifaciatus* and in addition with smaller pencils or single hairs at the middle laterally on all body segments except the first (thoracic) and last (abdominal) as well as with minute scattered bristles. Head brown, with margin of labial plate and the apical half of the mandible, blackish. Two nearly contiguous eye spots on each side of the head, the anterior one much smaller than the other. Antenna about a third as long as mandible, basal segment more than two-thirds of total length; ring organ located slightly below middle of basal segment; the longer blade not reaching the apex of apical segment. Ventral side of labrum with the usual bristles, but instead of the median bifid pair there is a pair of stout curved spines. Premandibles robust, blunt pointed, not toothed. Mandibles lack transverse furrows (wrinkles) on the convex side; accessory tooth and the usual two lateral bristles present; median brush terminating in 6 or 7 rays. Labial plate with 11 teeth, the first lateral notched on the outer side as in *C. trifasciatus*.[2] Prolegs, claws, and anal gills about as in the last mentioned species. Preanal bristle-bearing papillae not longer than broad with about 5 long apical bristles and one shorter one on anterior side.

Pupa. Length 4 mm. Thoracic respiratory organs transparent, 0.09 mm. long, four times as long as broad at widest part. Tergites 2 to 6 with shagreen, with two or four small, indistinctly defined circular clear areas at posterior fourth of segments 2 to 5; shagreen of sixth segment restricted to a central patch; segments 1, 7 and 8 nearly bare. Anal lobes with three moderately curved yellow spines which are three-eighths as long as the segment bearing them.

Adults reared from larvae collected in the Huron River, Washtenaw Co., Michigan, July 16, 1942, by Mr. C. O. Berg of Ann Arbor, Michigan.

[2] Aquatic Diptera, III, Fig. 186.

Current Entomological Literature

COMPILED BY THE EDITORIAL STAFF.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia and the University of Pennsylvania, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. Continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. Aor records of papers on Medical Entomology, see Review of Applied Entomology, Series C.

NOTE: The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the List of Journals given at the end of the literature. The number of the volume, and in some cases, the part, heft, &c. is followed by a colon (:). References to papers containing new forms or names not so stated in titles are followed by (*); if containing keyt are followed by (k); papers pertaining exclusively to Neotropical species, and not so indicated in the title, have the symbol (S).

Papers published in ENTOMOLOGICAL NEWS are not listed.

GENERAL—ALEE, W. C.—The social life of animals. [Norton & Co., N. Y.] 293 pp. BRIQUET, R., JR.—Biolumines scencia. [Ceres. Vicosa, Minas G., Brazil] 3: 272–99, ill. ENGELHARDT, GEORGE P.—Obituary by E. W. Teale, with port. [19] 37: 153–57. HUGGINS, M. I.—Grasshopper pets in China. [Nature Mag.] 36: 76–77, ill. SCHAUS, WILLIAM.—Obituary note by Heinrich and Chapin, with bibl. and port. [10] 44: 191–95. STEINHAUS, E. A.—Catalogue of bacteria associated with insects and ticks. [Burgess Pub. Co.] 206 pp. TRAVASSOS & TEUXERIRA DE FREITAS.—Relatorio da sexta excursao do Inst. Oswaldo Cruz, realizada a zona da Estrada de Ferro Noroeste do Brasil, em Nov. de 1941. [111] 37: 259–86.

ANATOMY, PHYSIOLOGY, ETC.—BIRMINGHAM, L.—Boundaries of differentiation of cephalic imaginal discs in Drosophila. [42] 91: 345–364. DEAN, R. W.—Development of the female reproductive system in Rhagoletis pomonella (Trypet.). [7] 35: 397–410, ill. EPHRUSSI, B.—Chemistry of eye color hormones of Drosophila. [Q. Rev. Biol.] 17: 327–338. LIGHT, S. F.—The determination of castes of social insects. [Q. Rev. Biol.] 17: 312–326. SMITH, S. G.—Polarization and progression in pairing. III. Pachytene observations in Neodiprion. [52] 20: 368–79.

ARACHNIDA AND MYRIOPODA—Bryant, E. B.—Descr. of certain Amer. Phidippus (Araneae). [119] 28: 693–707, ill. (*). Graham & Wackerbarth.—Spiders go to war. [Frontiers] Feb. 1943: 86–88. Kurata, T. B.—A list of the spiders of Prince Edward County, Ontario. [51] no. 48: 107–115.

THE SMALLER ORDERS—Light, S. F.—(See under Anatomy, Physiology.) Sweetmen & Laudani.—Rearing of the damsel fly, Ischnura verticalis in the laboratory. [7] 35: 387–88. Walker, E. M.—Additions to the list of Odonata of the maritime provinces. [Nova Scotia Inst. Sci.] 20: 159–76. Werneck, F. L.—Sobre algumas esp. do gen. Gliricola (Mallophaga). [111] 37: 297–316, ill. (S.*).

ORTHOPTERA—James, M. T.—Earwigs in Colorado. [19] 37: 180. Urquhart, F. A.—An annotated list of the crickets and grasshoppers of Prince Edward County, Ontario. [51] no. 48: 116–119.

HEMIPTERA—Balduf, W. V.—Bionomics of Catorhintha mendica (Core.). [19] 37: 158–66. Drake, C. J.—Two new Amer. sps. of the gen. Aradus. [105] 13: 151–154 (S). Funkhouser, W. D.—Note on Multareis planifrons (Membrac). [19] 37: 166. New Ceresa from Arizona (Membrac). [19] 37: 181–82, ill. Gorham, R. P.—Simple method for use in staining living aphids. [4] 74: 236. Hungerford & Sailer.—New Corixid from Minnesota. [19] 37: 179–80. Knull, D. J.—The gen. Neocoelidia in the U. S. (Cicadel.). [119] 28: 680–92, ill. (*). Torre-Bueno, J. R.—A bibliographical note on aquatic Hemiptera used as food in Mexico. [19] 37: 168–69. Notes on Coreidae. [19] 37: 180. Note on distribution of Heteroptera. [19] 37: 183–85. Usinger, R. L.—Notes on the variation and distribution of Mesovela mulsanti (Mesovel.). [19] 37: 177–78.

LEPIDOPTERA—Beamer, L. H.—The buckeye butterfly (Junonia coenia) in Ontario. [Can. Field-Nat.] 56: 113. Blanchard, R. A.—Hibernation of the corn earworm in the Central and Northeastern part of the U. S. [3] Tech. Bul.,

838. BRAUN, A. F.—A remarkable new Heliodinid (Microlep.). [7] 35: 373–78. CARPENTER & LEWIS.—A collection of Lepidoptera (Rhopal.) from Cayaman Islands. [Ann. Carnegie Mus.] 29: 371–96 (*). DETHIER, V. G.—Notes on the life histories of five common Geometridae. [4] 74: 225–34, ill. ELIOT, N.—Instinct and traveling butterflies. [9] 75: 236–44. FREEMAN, T. N.—A n.sp. of Pseudodexentera from apple, with notes on allied sps. (Olethreut.). [4] 74: 212–15, ill. KANE, H. B.—The tale of the promethea moth. [A. Knopf. N. Y.] 1942. KLOTS, A. B.—A newly imported European larvernid (Microlep.). [19] 37: 173. MCDUNNOUGH, J.—Two undescribed Canadian Microlepidoptera. [4] 74: 224. MCELVARE, R. R.—Domicile of the type of the heliothid moth, Melicleptria pulchripennis. [19] 37: 169. MATSCHAT, C. H.—American butterflies and moths. ill. [R. Freund, N. Y.] 1942. PUTMAN, W. L.—Host plants and parasites of some lepidopterous larvae [4] 74: 219–24. ROGERS, W. P.—Incisalia henrici in Fall River, Mass. [19] 37: 167–68. WARREN, B. C. S.—Genus Pandorian (new). A preliminary descr. (Nymphal.). [9] 75: 245–46. (European.)

DIPTERA—BEQUAERT, J.—Pigeon-fly, Pseudolynchia canariensis in New England and New York (Hippobosc.). [19] 37: 185–86. FAIRCHILD, G. B.—Genus Tabanus and resume of the Tabanidae of Panama. Notes of Tabanidae of Panama. [7] 35: 441–74, ill. (*). HART, T. A.—A descriptive study of the pilotaxy of a modal Culex pipiens fourth stage larva. [7] 35: 379–86, ill. KOMP, W. H. W.—Anopheles clarki, a n.sp. of Nyssorhynchus of wide distribution in S. Amer. (Culic.). [10] 44: 196–201, ill. KRAFCHICK, B.—The mouthparts of blackflies with special reference to Eusimulium lascivum (Simul.). [7] 35: 426–34, ill. MANGABEIRA, O.—Contribucao ao estudo dos Flebotomus, IX–XIII (Psychod.). [111] 37: 241–50; 251–58; 287–96; 327–31; 375–82, ill. MILLER, R. B.—A contribution to the ecology of the Chironomidae of Costello Lake, Algonquin Park, Ontario. [51] no. 49: 63 pp., ill. RUSSELL & RAO.—On relation of mechanical obstruction and shade to

ovipositing of Anopheles culicifacies. [42] 91: 303–329. VARGAS, L.—Notas sobre la terminalia de algunos simulidos de Mexico. [56] 3: 229–49, ill.

COLEOPTERA—BARBER, H. S.—Some synonymy in Dermestes. [19] 37: 174–76 (*). BRIMLEY, J. F.—A list of the long-horned beetles of Prince Edward County, Ontario. [51] no. 48: 120–123. DIETRICH, H.—Typhloglymma puteolatum (Cosson.). [19] 37: 178. DORSEY, C. K.—Musculature of the labrum, labium and pharyngeal region of adult and immature coleoptera. [60] 103: no. 7, 42 pp., ill. KNULL, J. N.—Two new Bruprestidae. [7] 35: 390–92, ill. LA RIVERS, I.—A new Trogloderus from Nevada with a key to the known sps. (Tenebrion.). [7] 35: 435–440. PULIAN, R.—The larvae of the sub-family Orphilinae and their bearing on the systematic status of the family Dermestidae. [7] 35: 393–96, ill. REYNOLDS, J. M.—Effect of parental feeding on the rate of development and mortality of Tribolium destructor (Tenebrion.). [31] 151: 55. RINGS, R. W.—The external anatomy of Sandalus niger (Rhipicer.). [7] 35: 411–25, ill. SCHOOF, H. F.—Genus Conotrachelus in the North Central U. S. [Ill. Biol. Monogr.] 29, (3), 170 pp., ill. (*).

HYMENOPTERA—BUTLER, C. G.—The honeybee. [31] 150: 759–60. COLE, A. C.—Synonyms of Formica difficilis (Formic.). [7] 35: 389. LIGHT, S. F.—(See under Anatomy, Physiology.) MICKEL & KROMBEIN.—Glyptometopa and related genera in the Brachycistidinae, with descr. of n.gen and sps. (Tiph.). [119] 28: 648–79, ill. MUESEBECK, C. F. W.—Two n.sps. of Allotropa parasitic on the Comstock mealybug. (Platygaster., Serphoidea). [19] 37: 170–73, ill. PARKER, J. B.—Notes on certain sps. of Bembicids. [10] 44: 202–8, ill. PATE, V. S. L.—Scientific name of the common blue mud-dauber (Sphec.). [4] 74: 217–18. SMITH, M. R.—New No. Amer. Solenopsis (Diplorhoptrum), (Formic.). [10] 44: 209–11 (k). WALLEY, G. S.—A new Canadian sp. of Asphragis (Ichn.). [4] 74: 234–36.

LIST OF JOURNALS CITED.

3.—United States Dept. Agriculture. 4.—Canadian Entomologist. 7.—Annals, Entomological Society of America. 9.—The Entomologist. 10.—Proc. Entom. Soc. Washington. 19.—Bull. Brooklyn Entom. Society. 31.—Nature, London. 35.—Revista, Sociedad Mexicana Hist. Nat. 37.—Proc. Hawaiian Entom. Society. 42.—Jour. of Experimental Zool. 51.—University of Toronto Studies, Biol. Ser. 52.—Canadian Jour. Research, Ottawa. 56.—Rev. Inst. Salub. y Enferm. Tropic., Mexico. 60.—Smithsonian Miscell. Collections. 111.—Memorias, Inst. Oswaldo Cruz. 119.—American Midland Naturalist, Notre Dame, Ind.

According to the January 15th issue of Science, Dr. Sheffield A. Neave, of the Imperial Institute of Entomology, and editor of "Nomenclator Zoologicus," has been appointed honorary secretary of the Zoological Society of London. He succeeds Dr. Julian Huxley who recently resigned.

According to a note in Science, Dr. William B. Herms, professor of parasitology and head of the Division of Entomology and Parasitology of the University of California, has been called to active duty as Lieutenant-Colonel in the Sanitary Corps. He is to be instructor of tropical medicine at the Army Medical Field Service School, Carlisle Barracks, Pennsylvania. During his absence, Dr. E. O. Essig will act as head of the Division at the University of California.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Arctic Lepidoptera especially **Noctuidae**—Wanted to hear from collectors who desire the Arctic Species. Have large collection. R. J. Fitch. Lloydminster, Saskatchewan, Canada.

Wanted—Tropical Lepidoptera and Insects. Also domestic species. Will exchange or buy specimens. M. A. Zappalorti, 253 Senator Street, Brooklyn, N. Y.

Wanted—Specimens of the genus Calendra (Sphenophorus) from North America. Will exchange Eastern U. S. Calendra or other Coleoptera for desired species. R. C. Casselberry, 302 Lincoln Avenue, Lansdowne, Penna.

Coccinellidae wanted from all parts of the world, especially South and Central America. Buy or exchange. G. H. Dieke, 1101 Argonne Drive, Baltimore, Md.

I shall be grateful to anyone who will give me any reference where insects taken on Mt. Desert Island, Maine, have been used wholly or in part in describing a species.

WILLIAM PROCTER, BAR HARBOR, MAINE

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BLOOD DONOR PROJECT

Plasma, processed from blood donated to the Army and Navy through the Red Cross Blood Donor Service is proving to be a literal life saver to our wounded fighting men. Surgeon General Ross T. McIntire of the Navy recently asserted that, thanks to plasma and other improved methods of treating casualties, the Navy was losing less than one percent of those wounded on Guadalcanal. In the last World War more than seven percent died of their wounds.

In the tropic jungles of New Guinea and the Solomons, Army and Navy doctors have found another talking point for plasma. Should a regular blood transfusion be undertaken the donor might subsequently prove to be an unsuspected malaria case. The use of plasma eliminates this possibility.

This year the Red Cross has been requested to supply 4,000,000 blood donations. This and all other Red Cross work is financed through the 1943 Red Cross War Fund. A goal of $125,000,000 has been set, to be raised in March.

Let that last year's collecting outfit serve for the present

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